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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,152	10/05/2004	Kia Silverbrook	YU175NPUS	6673
24011 7590 05/01/2008 SILVERBROOK RESEARCH PTY LTD 393 DARLING STREET BALMAIN, 2041 AUSTRALIA				
			EXAMINER	
			AL HASHIMI, SARAH	
			ART UNIT	PAPER NUMBER
			2853	
			MAIL DATE	DELIVERY MODE
			05/01/2008	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/510,152

**Applicant(s)**

SILVERBROOK, KIA

**Examiner**

SARAH AL HASHIMI

**Art Unit**

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02/05/2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 3-10 is/are pending in the application.
- 4a) Of the above claim(s) 7-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3 and 10 is/are rejected.
- 7) ☒ Claim(s) 4-6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

***Election/Restrictions***

1. Applicant's election of claims 1,3-6,10 in the reply filed on 02/05/2008 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 7-9 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 02/05/2008.
3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "**said**," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless —

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1&10 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujii (US 6,371,598).

Fujii teaches:

Claim 1: a substrate (fig 16 #1002); and a plurality of nozzle arrangements that is positioned on the substrate (fig 16 #1021), each nozzle arrangement comprising a nozzle chamber structure that is positioned on the substrate and that defines a nozzle chamber from which ink is to be ejected (fig 16 #1006); an ink-ejecting mechanism that is operatively arranged with respect to the nozzle chamber structure, the ink-ejecting mechanism including at least one moving component that is displaceable to generate a pressure pulse within the nozzle chamber to eject ink from the nozzle chamber (fig 16 #1005); an actuator that is positioned on the substrate and that has at least one working member that is of a material having a coefficient of thermal expansion such that the, or each, working member is capable of substantially rectilinear expansion and contraction when heated and subsequently cooled (col 14 lines 22-24 "the pressure generating means may alternatively comprise a resistance heating element disposed in ejection chamber 6"); and an energy transmitting means that interconnects the, or each, moving component and the, or each, working member so that energy generated by the, or each, working member as a result of expansion and subsequent contraction of the, or each, working member is transmitted to the, or each, moving component resulting in displacement of the, or each, moving component and generation of said pressure pulse (col 14 lines 18-26 "it is also possible to provide a piezoelectric element as the pressure generating means on the side of diaphragm 5 opposite ejection

Art Unit: 2853

chamber 6. In this case an appropriate voltage is applied to the piezoelectric device to deform the diaphragm. The pressure generating means may alternatively comprise a resistance heating element disposed in ejection chamber 6 such that the pressure ejecting the ink is created by the thermal expansion of the ink induced by the resistance heating element"), wherein, in each nozzle arrangement, the ink ejection port is arranged in the nozzle chamber so as to be a distal end portion of the moving component with respect to the working member and energy transmitting means (fig 16 #1021 is at a distal end).

Claim 10: at least one printhead integrated circuit as claimed in claim 1 (fig 1 #10).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujii (US 6,371,598) in view of Jeanmaire (US 2003/0202055).

Fujii does not teach but Jeanmaire teaches:

Claim 3: the substrate includes a silicon wafer substrate and a CMOS drive circuit layer positioned on the silicon wafer substrate (para 28 "the ink preferably flows through slots and/or holes etched through a silicon substrate of printhead 16A, 16B to its front surface where a plurality of nozzles and heaters are situated. With printhead 16A, 16B fabricated from silicon, it is possible to integrate heater control circuits 14 with the

Art Unit: 2853

printhead. Printhead 16A, 16B can be formed using known semiconductor fabrication techniques (CMOS circuit fabrication techniques”).

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Fujii to incorporate: the substrate includes a silicon wafer substrate and a CMOS drive circuit layer positioned on the silicon wafer substrate as taught by Jeanmaire because the efficiency and cost factors of using a silicon substrate.

***Allowable Subject Matter***

8. Claims 4-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The primary reason for the allowance of claims 4-6 is the inclusion of the limitation of a printhead integrated circuit that includes each actuator includes one elongate working arm that has a fixed end portion and a working end portion, the working arm being configured to define part of a resistive heating circuit,. It is this limitation found in claim 4, as it is claimed in the combination of, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

***Response to Arguments***

9. Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(US 2002/0149665) discloses an actuator supported by a working arm.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SARAH AL HASHIMI whose telephone number is (571)272-7159. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on 571 272 2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either PAIR or Public PAIR. Status information for unpublished applications is available through PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SA/

/An H. Do/

Primary Examiner, Art Unit 2853